

F i g . 1

| | | | | | |
|-----|-----|-----|-----|-----|-----|
| 9 | 18 | 27 | 36 | 45 | 54 |
| ATG | GAA | ATT | ATT | TCA | TCA |
| Met | Glu | Ile | Ile | Ser | Ser |
| TTG | TTA | ACA | TCA | AAC | ATT |
| Leu | Leu | Thr | Ser | Asn | Ile |
| AGC | AAA | GAA | AAT | TAT | GAC |
| Ser | Lys | Glu | Asn | Tyr | Asp |
| 117 | 126 | 135 | 144 | 153 | 162 |
| AGC | AAA | GAA | AAT | TAT | GAC |
| Ser | Lys | Glu | Asn | Tyr | Asp |
| 171 | 180 | 189 | 198 | 207 | 216 |
| AGA | AGC | CTC | AAT | TTT | GAG |
| Arg | Ser | Leu | Asn | Phe | Glu |
| 225 | 234 | 243 | 252 | 261 | 270 |
| ATG | AGT | ACA | CCT | GCA | GTC |
| Met | Ser | Thr | Pro | Ala | Val |
| 279 | 288 | 297 | 306 | 315 | 324 |
| AGA | TTT | GGG | AGG | AAC | GTT |
| Arg | Phe | Gly | Arg | Asn | Val |
| 333 | 342 | 351 | 360 | 369 | 378 |
| CCT | CTG | AGA | TCT | GGA | AGA |
| Pro | Leu | Arg | Ser | Gly | Arg |
| 387 | 396 | 405 | 414 | 423 | 432 |
| CTG | CCC | CAA | AGG | TTT | GGG |
| Leu | Pro | Gln | Arg | Phe | Gly |
| 441 | 450 | 459 | 468 | 477 | 486 |
| AGT | GAT | TTG | TGT | CAA | GGA |
| Ser | Asp | Leu | Cys | Gln | Gly |
| 495 | 504 | 513 | 522 | 531 | 540 |
| TCC | ATG | ACC | TGC | CAG | CAC |
| Ser | Met | Thr | Cys | Gln | His |

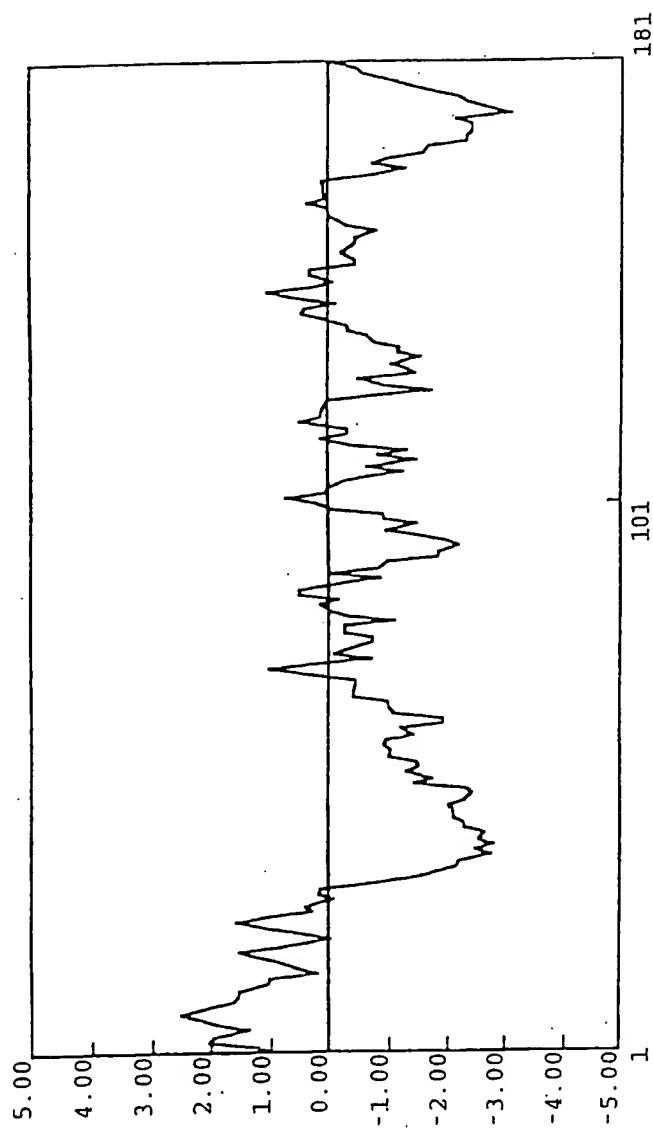
TAA 3'

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F i g . 2



F i g . 3

54

| | | | | | |
|---|-----|-----|-----|-----|-----|
| 9 | 18 | 27 | 36 | 45 | |
| ATG GAA ATT ATT TCA TCA AAA CTA TTC ATT TTA TTG ACT TTA GCC ACT TCA AGC | | | | | |
| Met Glu Ile Ile Ser Ser Lys Leu Phe Ile Leu Leu Thr Leu Ala Thr Ser Ser | | | | | |
| 63 | 72 | 81 | 90 | 99 | 108 |
| TTG TTA ACA TCA AAC ATT TTT TGT GCA GAT GAA TTA GTG ATG TCC AAT CTT CAC | | | | | |
| Leu Leu Thr Ser Asn Ile Phe Cys Ala Asp Glu Leu Val Met Ser Asn Leu His | | | | | |
| 117 | 126 | 135 | 144 | 153 | 162 |
| AGC AAA GAA AAT TAT GAC AAA TAT TCT GAG CCT AGA GGA TAC CCA AAA GGG GAA | | | | | |
| Ser Lys Glu Asn Tyr Asp Lys Tyr Ser Glu Pro Arg Gly Tyr Pro Lys Gly Glu | | | | | |
| 171 | 180 | 189 | 198 | 207 | 216 |
| AGA AGC CTC AAT TTT GAG GAA TTA AAA GAT TGG GGA CCA AAA AAT GTT ATT AAG | | | | | |
| Arg Ser Leu Asn Phe Glu Glu Leu Lys Asp Trp Gly Pro Lys Asn Val Ile Lys | | | | | |
| 225 | 234 | 243 | 252 | 261 | 270 |
| ATG AGT ACA CCT GCA GTC AAT AAA ATG CCA CAC TCC TTC GCC AAC TTG CCA TTG | | | | | |
| Met Ser Thr Pro Ala Val Asn Lys Met Pro His Ser Phe Ala Asn Leu Pro Leu | | | | | |
| 279 | 288 | 297 | 306 | 315 | 324 |
| AGA TTT GGG AGG AAC GTT CAA GAA GAA AGA AGT GCT GGA GCA ACA GCC AAC CTG | | | | | |
| Arg Phe Gly Arg Asn Val Gln Glu Arg Ser Ala Gly Ala Thr Ala Asn Leu | | | | | |
| 333 | 342 | 351 | 360 | 369 | 378 |
| CCT CTG AGA TCT GGA AGA AAT ATG GAG GTG AGC CTC GTG AGA CGT GTT CCT AAC | | | | | |
| Pro Leu Arg Ser Gly Arg Asn Met Glu Val Ser Leu Val Arg Arg Val Pro Asn | | | | | |
| 387 | 396 | 405 | 414 | 423 | 432 |
| CTG CCC CAA AGG TTT GGG AGA ACA ACA ACA GCC AAA AGT GTC TGC AGG ATG CTG | | | | | |
| Leu Pro Gln Arg Phe Gly Arg Thr Thr Ala Lys Ser Val Cys Arg Met Leu | | | | | |
| 441 | 450 | 459 | 468 | 477 | 486 |
| AGT GAT TTG TGT CAA GGA TCC ATG CAT TCA CCA TGT GCC AAT GAC TTA TTT TAC | | | | | |
| Ser Asp Leu Cys Gln Gly Ser Met His Ser Pro Cys Ala Asn Asp Leu Phe Tyr | | | | | |
| 495 | 504 | 513 | 522 | 531 | 540 |
| TCC ATG ACC TGC CAG CAC CAA GAA ATC CAG AAT CCC GAT CAA AAA CAG TCA AGG | | | | | |
| Ser Met Thr Cys Gln His Gln Glu Ile Gln Asn Pro Asp Gln Lys Gln Ser Arg | | | | | |
| 549 | 558 | 567 | 576 | 585 | |
| AGA CTG CTA TTC AAG AAA ATA GAT GAT GCA GAA TTG AAA CAA GAA AAA TAA 3' | | | | | |
| Arg Leu Leu Phe Lys Lys Ile Asp Asp Ala Glu Leu Lys Gln Glu Lys *** | | | | | |

Fig. 4

54

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|--|
| 9 | 18 | 27 | 36 | 45 | | | | | | | | | | | | | | |
| ATG | GAA | ATT | ATT | TCA | TTA | AAA | CGA | TTC | ATT | TTA | TTG | ATG | TTA | GCC | ACT | TCA | AGC | |
| Met | Glu | Ile | Ile | Ser | Leu | Lys | Arg | Phe | Ile | Leu | Leu | Met. | Leu | Ala | Thr | Ser | Ser | |

108

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 63 | 72 | 81 | 90 | 99 | | | | | | | | | | | | | | |
| TTG | TTA | ACA | TCA | AAC | ATC | TTC | TGC | ACA | GAC | GAA | TCA | AGG | ATG | CCC | AAT | CTT | TAC | |
| Leu | Leu | Thr | Ser | Asn | Ile | Phe | Cys | Thr | Asp | Glu | Ser | Arg | Met | Pro | Asn | Leu | Tyr | |

162

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 117 | 126 | 135 | 144 | 153 | | | | | | | | | | | | | | |
| AGC | AAA | AAG | AAT | TAT | GAC | AAA | TAT | TCC | GAG | CCT | AGA | GGA | GAT | CTA | GGC | TGG | GAG | |
| Ser | Lys | Lys | Asn | Tyr | Asp | Lys | Tyr | Ser | Glu | Pro | Arg | Gly | Asp | Leu | Gly | Trp | Glu | |

216

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 171 | 180 | 189 | 198 | 207 | | | | | | | | | | | | | | |
| AAA | GAA | AGA | AGT | CTT | ACT | TTT | GAA | GAA | GTA | AAA | GAT | TGG | GCT | CCA | AAA | ATT | AAG | |
| Lys | Glu | Arg | Ser | Leu | Thr | Phe | Glu | Glu | Val | Lys | Asp | Trp | Ala | Pro | Lys | Ile | Lys | |

270

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 225 | 234 | 243 | 252 | 261 | | | | | | | | | | | | | | |
| ATG | AAT | AAA | CCT | GTA | GTC | AAC | AAA | ATG | CCA | CCT | TCT | GCA | GCC | AAC | CTG | CCA | CTG | |
| Met | Asn | Lys | Pro | Val | Val | Asn | Lys | Met | Pro | Pro | Ser | Ala | Ala | Asn | Leu | Pro | Leu | |

324

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 279 | 288 | 297 | 306 | 315 | | | | | | | | | | | | | | |
| AGA | TTT | GGG | AGG | AAC | ATG | GAA | GAA | AGG | AGC | ACT | AGG | GCG | ATG | GCC | CAC | CTG | | |
| Arg | Phe | Gly | Arg | Asn | Met | Glu | Glu | Glu | Arg | Ser | Thr | Arg | Ala | Met | Ala | His | Leu | |

378

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 333 | 342 | 351 | 360 | 369 | | | | | | | | | | | | | | |
| CCT | CTG | AGA | CTC | GGA | AAA | AAT | AGA | GAG | GAC | AGC | CTC | TCC | AGA | TGG | GTC | CCA | AAT | |
| Pro | Leu | Arg | Leu | Gly | Lys | Asn | Arg | Glu | Asp | Ser | Leu | Ser | Arg | Trp | Val | Pro | Asn | |

432

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 387 | 396 | 405 | 414 | 423 | | | | | | | | | | | | | |
| CTG | CCC | CAG | AGG | TTT | GGA | AGA | ACA | ACA | GCC | AAA | AGC | ATT | ACC | AAG | ACC | CTG | |
| Leu | Pro | Gln | Arg | Phe | Gly | Arg | Thr | Thr | Ala | Lys | Ser | Ile | Thr | Lys | Thr | Leu | |

486

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 441 | 450 | 459 | 468 | 477 | | | | | | | | | | | | | | |
| AGT | AAT | TTG | CTC | CAG | CAG | TCC | ATG | CAT | TCA | CCA | TCT | ACC | AAT | GGG | CTA | CTC | TAC | |
| Ser | Asn | Leu | Leu | Gln | Gln | Ser | Met | His | Ser | Pro | Ser | Thr | Asn | Gly | Leu | Leu | Tyr | |

540

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 495 | 504 | 513 | 522 | 531 | | | | | | | | | | | | | | |
| TCC | ATG | GCC | TGC | CAG | CCC | CAA | GAA | ATC | CAG | AAT | CCT | GGT | CAA | AAG | AAC | CTA | AGG | |
| Ser | Met | Ala | Cys | Gln | Pro | Gln | Glu | Ile | Gln | Asn | Pro | Gly | Gln | Lys | Asn | Leu | Arg | |

585

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|
| 549 | 558 | 567 | 576 | 585 | | | | | | | | | | | | | | |
| AGA | CGG | GGA | TTC | CAG | AAA | ATA | GAT | GAT | GCA | GAA | TTG | AAA | CAA | GAA | AAA | TAA | 3' | |
| Arg | Arg | Gly | Phe | Gln | Lys | Ile | Asp | Asp | Ala | Glu | Leu | Lys | Gln | Glu | Lys | *** | | |

F i g . 5

9 18 27 36 45 54
 ATG GAA ATT ATT TCA TCA AAG CGA TTC ATT TTA TTG ACT TTA GCA ACT TCA AGC
 Met Glu Ile Ile Ser Ser Lys Arg Phe Ile Leu Leu Thr Leu Ala Thr Ser Ser

 63 72 81 90 99 108
 TTC TTA ACT TCA AAC ACC CTT TGT TCA GAT GAA TTA ATG ATG CCC CAT TTT CAC
 Phe Leu Thr Ser Asn Thr Leu Cys Ser Asp Glu Leu Met Met Pro His Phe His

 117 126 135 144 153 162
 AGC AAA GAA GGT TAT GGA AAA TAT TAC CAG CTG AGA GGA ATC CCA AAA GGG GTA
 Ser Lys Glu Gly Tyr Lys Tyr Tyr Gln Leu Arg Gly Ile Pro Lys Gly Val

 171 180 189 198 207 216
 AAG GAA AGA AGT GTC ACT TTT CAA GAA CTC AAA GAT TGG GGG GCA AAG AAA GAT
 Lys Glu Arg Ser Val Thr Phe Gln Glu Leu Lys Asp Trp Gly Ala Lys Lys Asp

 225 234 243 252 261 270
 ATT AAG ATG AGT CCA GCC CCT GCC AAC AAA GTG CCC CAC TCA GCA GCC AAC CTT
 Ile Lys Met Ser Pro Ala Pro Ala Asn Lys Val Pro His Ser Ala Ala Asn Leu

 279 288 297 306 315 324
 CCC CTG AGG TTT GGG AGG AAC ATA GAA GAC AGA AGA AGC CCC AGG GCA CGG GCC
 Pro Leu Arg Phe Gly Arg Asn Ile Glu Asp Arg Arg Ser Pro Arg Ala Arg Ala

 333 342 351 360 369 378
 AAC ATG GAG GCA GGG ACC ATG AGC CAT TTT CCC AGC CTG CCC CAA AGG TTT GGG
 Asn Met Glu Ala Gly Thr Met Ser His Phe Pro Ser Leu Pro Gln Arg Phe Gly

 387 396 405 414 423 432
 AGA ACA ACA GCC AGA CGC ATC ACC AAG ACA CTG GCT GGT TTG CCC CAG AAA TCC
 Arg Thr Thr Ala Arg Arg Ile Thr Lys Thr Leu Ala Gly Leu Pro Gln Lys Ser

 441 450 459 468 477 486
 CTG CAC TCC CTG GCC TCC AGT GAA TCG CTC TAT GCC ATG ACC CGC CAG CAT CAA
 Leu His Ser Leu Ala Ser Ser Glu Ser Leu Tyr Ala Met Thr Arg Gln His Gln

 495 504 513 522 531 540
 GAA ATT CAG AGT CCT GGT CAA GAG CAA CCT AGG AAA CGG GTG TTC ACG GAA ACA
 Glu Ile Gln Ser Pro Gly Gln Glu Gln Pro Arg Lys Arg Val Phe Thr Glu Thr

 549 558 567 576 585 594
 GAT GAT GCA GAA AGG AAA CAA GAA AAA ATA GGA AAC CTC CAG CCA GTC CTT CAA
 Asp Asp Ala Glu Arg Lys Gln Glu Lys Ile Gly Asn Leu Gln Pro Val Leu Gln

 603 612
 CGG GCT ATG AAG CTG TGA 3'
 Gly Ala Met Lys Leu ***

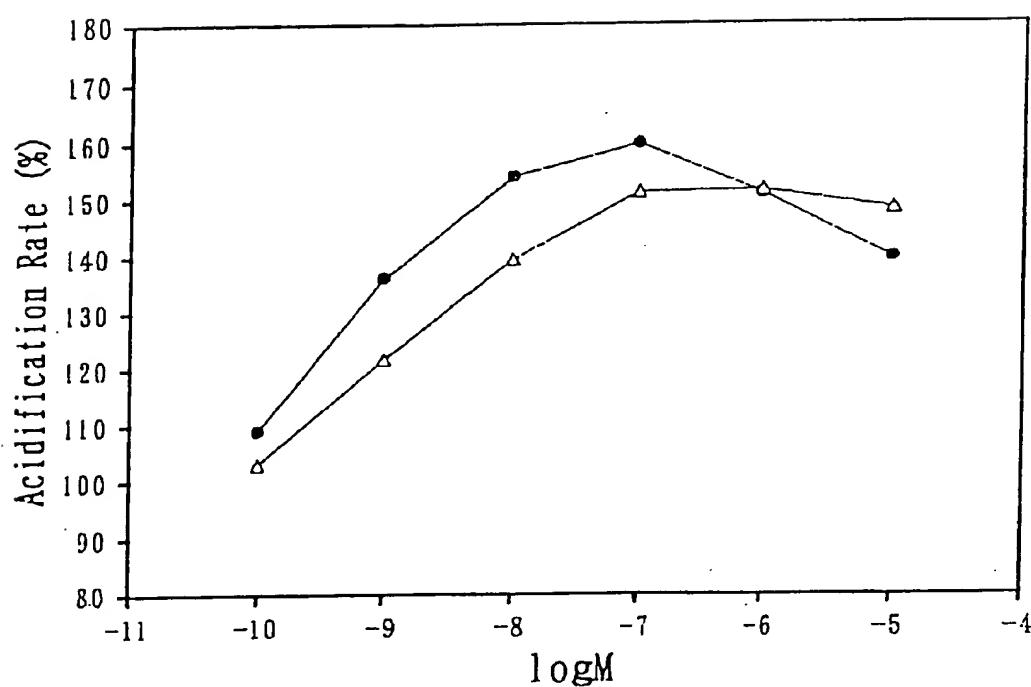
F i g . 6

| | | | | | |
|----------|-----|--|-----|------------------------------------|-----|
| hPLRF.aa | 1 | MELISSKFI LILTATSSL TSNIFCADEL | 30 | VSNLHSKEN YDKYSEPRG- | 50 |
| bPLRF.aa | 1 | MELISSKRFI LI M ATSSL TSNIFCADES | 30 | RMPNLJSKEN YDKYSEPRGQ | 50 |
| rPLRF.aa | 1 | MELISSKRFI LILTATSSL TSNIFCADEL | 30 | MTHFEHSKEG YDKYSEPRGQ | 50 |
| | | | | | |
| hPLRF.aa | 51 | --YPKG--ER S1 NFEELKDW GPKNPKMST | 60 | [PAVNKMPHSE ANLPLRFGRN | 100 |
| bPLRF.aa | 51 | --LGWERK--ER S1 NFEELKDW APK--IKOMNK | 60 | [PVNKMPHSA ANLPLRFGRN | 100 |
| rPLRF.aa | 51 | --PKGVKER S1 NFEELKDW GAKKDKMSP | 60 | [APANKMPHSA ANLPLRFGRN | 100 |
| | | | | | |
| hPLRF.aa | 101 | VQEERSAGAT ANPLRSGN MEVSI VRRMP | 110 | NLPQRFGRTT TAKSVCRMIS | 150 |
| bPLRF.aa | 101 | MEEERSTRAM AFPLRSGN REDSLSWMP | 110 | NLPQRFGRTT TAKSITKTLS | 150 |
| rPLRF.aa | 101 | EDRSPEAR AM----- | 110 | -EAGTMSHFH STPQRFGRIT -AFRRIUTKTIA | 150 |
| | | | | | |
| hPLRF.aa | 151 | DICQOSMHSF CANDYFSMT COHQEIQNPD | 160 | QKQSRRLFK KIDDAELKQE | 200 |
| bPLRF.aa | 151 | NLICQOSMHSF STNGLLYSA ECPPEIQNPG QKNIIRRREPQ | 151 | KIDDAELKQE | 200 |
| rPLRF.aa | 151 | GIPQKSFHSL ASSESYAVT ROHQEIQSPG QDQPRKMET | 151 | ETDDAERKQE | 200 |
| | | | | | |
| hPLRF.aa | 201 | K* | 210 | 220 | 230 |
| bPLRF.aa | 201 | K* | 201 | 201 | 201 |
| rPLRF.aa | 201 | KIGNLQPVVLQ GAMKL* | | | |

F i g . 7

| | | |
|-----|---|------------|
| 1 | TTTAGACTTAGACGAAATGGAATTATTCATTAAACGATTCACTTATTGACTGTG MetGluIleIleSerLeuLysArgPheIleLeuLeuThrVal | 58 14 |
| 1 | | |
| 59 | GCAACTTCAAGCTTCTAACATCAAACACCTCTGTACAGATGAGTCATGATGCCTCAT AlaThrSerSerPheLeuThrSerAsnThrPheCysThrAspGluPheMetMetProHis | 118 34 |
| 15 | | |
| 119 | TTTCACAGCAAAGAAGGTGACGGAAAATCTCCAGCTGAGAGGAATCCAAAAGGGAA PheHisSerLysGluGlyAspGlyLysTyrSerGlnLeuArgGlyIleProLysGlu | 178 54 |
| 35 | | |
| 179 | AAGGAAAAGAAGTGTCAAGAACTAAAAGATTGGGGGCAAAGAATGTTATTAAG LysGluArgSerValSerPheGlnGluLeuLysAspTrpGlyAlaLysAsnValIleLys | 238 74 |
| 55 | | |
| 239 | ATGAGTCCAGCCCCGCAACAAAGTGCCCCACTCAGCAGCCAACCTGCCCTGAGATT MetSerProAlaProAlaAsnLysValProHisSerAlaAlaAsnLeuProLeuArgPhe | 298 94 |
| 75 | | |
| 299 | GGAAGGACCATAGATGAGAAAAGAAGCCCCGCAGCACGGTCAACATGGAGGCAGGGACC GlyArgThrIleAspGluLysArgSerProAlaAlaArgValAsnMetGluAlaGlyThr | 358 114 |
| 95 | | |
| 359 | AGGAGCCATTCCCCAGCCTGCCAAAGGTTGGGAGAACAAACAGCCAGAACGCCCAAG ArgSerHisPheProSerLeuProGlnArgPheGlyArgThrThrAlaArgSerProLys | 418 134 |
| 115 | | |
| 419 | ACACCCGCTGATTGCCACAGAAACCCCTGCACTCACTGGCTCCAGCGAGTTGCTCTAC ThrProAlaAspLeuProGlnLysProLeuHisSerLeuGlySerSerGluLeuLeuTyr | 478 154 |
| 135 | | |
| 479 | GTCATGATCTGCCAGCACCAAGAAATTCAAGACTCCTGGTGGAAAGCGAACGAGGAGAGGA ValMetIleCysGlnHisGlnGluIleGlnSerProGlyGlyLysArgThrArgArgGly | 538 174 |
| 155 | | |
| 539 | GCGTTTGTGGAAACAGATGATGCCAGAAAGGAAACCAGAAAAATAGGAAACCTCGAGCCCG AlaPheValGluThrAspAspAlaGluArgLysProGluLys*** | 598 188 |
| 175 | | |
| 599 | ACTTCAAGAGGCTACGGAGC | 618 188 |
| 188 | | |

Fig. 8



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F i g . 9

